Space Weather Highlights 04 August 1997 -10 August 1997

Solar activity was very low to low. Region 8069 (N21, L112 class/area Dao/100 on 07 August) produced numerous B Class flares and Several C Class flares from 06-10 August (it rotated past the west limb on 09 August).

Solar wind data were received from the WIND spacecraft a few hours per day. Velocities gradually fell from 410 - 300 km/sec on 04 - 06 August and then began a gradual rise to 360 km/sec from 07 August to mid day on 09 August. Velocities then rose sharply to 470 km/sec and then fell to 400 km/sec at the end of the period. Densities peaked at 36 p/cc on 04 August and fell to the 4- 8 p/cc range by mid day on 05 August and remained there through 06 August. Densities rose gradually to 26 p/cc on 07 August and fell back to 4 - 10 p/cc during 08 August. Densities rose to 30 p/cc by mid day 09 August and fell abruptly to 4 - 8 p/cc, remaining there for the rest of the period. Bz varied from minus 06 to plus 05 nT (GSM). However, Bz was mostly positive on 04 August and mostly negative during the last have of both 08 and 10 August. Solar sector orientation was mostly away (phi angle near 135 degrees) on 04, 08 and 10 August and mostly toward (phi angle near 315 degrees) on 05-07 August. Orientation was not readily discernible on 09 August.

There were no significant proton enhancements observed at satellite altitudes.

The greater than 2 MeV electron flux at geosynchronous altitudes was at mostly normal levels.

The geomagnetic field was mostly quiet to unsettled with isolated periods of active level conditions at all latitudes on 04, 10, 11 August.

Space Weather Forecast 13 August 1997 -08 September 1997

Solar activity is expected to be very low.

No significant proton enhancements are expected at satellite altitudes.

The greater than 2 MeV electron flux at geosynchronous altitudes is expected to be normal to moderate.

The geomagnetic field is expected to be predominately quiet to unsettled.



Daily Solar Data

	Radio	Sun	Sunspot	X-ray				Flares				
	Flux	spot	Area	Background	X	-ray Fl	ux		Op	tical		
Date	10.7 cm	No. ((10 ⁻⁶ hemi.)		C	M	X	S	1	2	3	4
04 August	73	12	20	<a1.0< td=""><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></a1.0<>	0	0	0	0	0	0	0	0
05 August	75	39	30	<a1.0< td=""><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></a1.0<>	0	0	0	0	0	0	0	0
06 August	77	45	120	A3.6	0	0	0	1	0	0	0	0
07 August	78	55	140	A3.0	0	0	0	8	0	0	0	0
08 August	78	65	230	A5.2	0	0	0	4	0	0	0	0
09 August	78	61	90	A8.8	5	0	0	3	0	0	0	0
10 August	78	31	40	B2.3	4	0	0	0	0	0	0	0

Daily Particle Data

			Dany Lan	iicie Daia					
		Proton Fluence otons/cm ² -day		Electron Fluence (electrons/cm²-day-sr)					
Date	>1MeV	>10MeV	>100MeV	>.6MeV	>2MeV	>4MeV			
04 August	5.3E+5	1.8E+4	4.2E+3		3.1E + 6	6			
05 August	3.0E + 5	1.8E+4	4.2E+3		6				
06 August	3.0E + 5	1.8E+4	4.3E+3		2.3E+6				
07 August	4.7E + 5	1.8E+4	4.3E+3		2.3E + 6	6			
08 August	4.2E + 5	1.8E+4	4.2E+3		6				
09 August	4.2E + 5	1.8E+4	4.2E+3	9.3E+5					
10 August	2.9E + 5	1.8E+4	4.1E+3	2.0E+6					

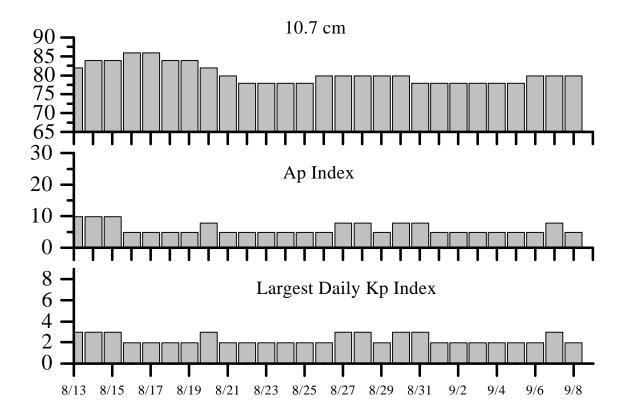
Daily Geomagnetic Data

			Duny C	reomagnem Dam			
	M	liddle Latitude		High Latitude]	Estimated	_
	F	redericksburg		College		Planetary	
Date	A	K-indices	A	K-indices	A	K-indices	
04 August	10	4-2-2-3-1-1-3-1	4	2-2-3-2-0-0-0	8	3-2-2-3-1-2-3-2	_
05 August	6	1-2-2-1-1-2-2-2	0	0-1-0-0-0-0-0	3	1-1-1-1-0-1-1-1	
06 August	5	2-2-0-0-2-2-2-1	*	0-0-0-0-*-0-0-0	4	1-2-0-0-2-3-2-1	
07 August	7	1-1-1-3-2-2-3	1	1-0-0-0-2-0-0-0	6	1-1-1-2-2-2-3	
08 August	7	2-2-1-2-3-1-2-1	2	1-0-0-2-2-0-0-0	5	1-2-1-2-2-2-2	
09 August	10	0-1-3-2-3-2-3-3	*	0-0-2-0-*-1-1-0	7	1-0-2-1-3-3-2-2	
10 August	8	2-2-3-2-2-1-2-2	3	1-1-2-3-0-0-1-0	7	2-1-4-2-1-1-2-2	

Alerts and Warnings Issued

Date and Time of Issue (UT)	Type of Alert or Warning	Date and Time of Event (UT)
10 Aug 0859	K=4 observed	10 Aug 06-09





Twenty-seven Day Outlook

	Radio Flux	Planetary	Largest		Radio Flux	Planetary	Largest
Date	10.7 cm	A Index	Kp Index	Date	10.7 cm	A Index	Kp Index
13 Aug	82	10	3	27 Aug	80	8	3
14	84	10	3	28	80	8	3
15	84	10	3	29	80	5	2
16	86	5	2	30	80	8	3
17	86	5	2	31	78	8	3
18	84	5	2	01 Sep	78	5	2
19	84	5	2	02	78	5	2
20	82	8	3	03	78	5	2
21	80	5	2	04	78	5	2
22	78	5	2	05	78	5	2
23	78	5	2	06	80	5	2
24	78	5	2	07	80	8	3
25	78	5	2	08	80	5	2
26	80	5	2				



Energetic Event

	Time (UT)	X-ray	Optical Inform	nation	Peak	Sweep Freq
Date	1/2	Integ	Imp Location	Rgn	Radio Flux	Intensity
	Begin Max Max	Class Flux	Brtns Lat CMD	#	245 2695	II IV

No Event Observed

Date Time X-ray Optical Imp/ Location Rgn Rgn Date No Flares Secure 1 05 August No Flares Observed 8069 9919 0925 0934 81.4 8069 8069 8069 9919 0924 0933 8069 8069 8069 9919 9924 0933 8069 8069 8069 9919 9924 0933 8069 85F N19W55 8069 8069 91117 1121 1123 8F N19W55 8069 9069 91117 1121 1123 SF N19W55 8069 9069 91117 1121 1123 SF N19W55 8069 9069 9114 1136 1138 1147 B1.1 SF N19W57 8069 9069 914 1147 B1.1 SF N19W57 8069 912 8144 1147 1142 1428 14420 A1437 SF N19W57					Flare List			
Date Begin Max End Class Brins Lat CMD #						C		
04 August	_				-	_		
05 August No Flares Observed 06 August 0603 0605 0614 B4.9 SF N20W38 8069 07 August 0924 0924 0933 SF N19W55 8069 1035 1035 1046 SF N19W56 8069 1117 1121 1123 SF N19W56 8069 1136 1138 1147 B1.1 SF N19W57 8069 1235 1238 1241 B1.4 1300 1303 1315 B2.1 SF N19W57 8069 1428 U1420 A1437 SF N19W57 8069 96 97 97 97 97 97 97 97 97	Date	Begin	Max	End	Class.	Brtns	Lat CMD	#
06 August 0603 0605 0614 B4.9 SF N20W38 8069 07 August 0924 0924 0933 SF N19W55 8069 1035 1035 1046 SF N19W56 8069 1117 1121 1123 SF N19W56 8069 1136 1138 1147 B1.1 SF N19W57 8069 1235 1238 1241 B1.4 SF N19W57 8069 1235 1238 1241 B1.4 SF N19W57 8069 1428 U1420 A1437 SF N19W57 8069 1428 U1420 A1437 SF N19W57 8069 1723 1724 1730 SF N19W58 8069 1843 1851 1858 B2.8 SF N19W58 8069 1843 1851 1858 B2.8 SF N19W71 8069 1843 <td< td=""><td>04 August</td><td>No Flar</td><td>es Observ</td><td>ved</td><td></td><td></td><td></td><td></td></td<>	04 August	No Flar	es Observ	ved				
0919 0925 0934 B1.4 07 August 0924 0924 0933 SF N19W55 8069 1035 1035 1046 SF N19W56 8069 1117 1121 1123 SF N19W56 8069 1117 1121 1123 SF N19W57 8069 1235 1238 1241 B1.4 1300 1303 1315 B2.1 SF N19W57 8069 14428 U1420 A1437 SF N19W57 8069 1723 1724 1730 SF N19W58 8069 1843 1851 1858 B2.8 2008 2037 2100 B3.5 0905 0909 0914 B1.7 1249 1252 1259 B1.8 SF N19W71 8069 1315 1316 1320 SF N19W73 8069 1315 1316 1320 SF N19W73 8069 1442 1445 1447 B1.2 SF N19W73 8069 1442 1445 1447 B1.2 SF N19W73 8069 1442 1445 1447 B1.2 SF N19W73 8069 1444 1148 1150 B5.2 120 1211 1220 C1.0 SF N19W71 8069 1254 1302 1306 C3.7 1206 1211 1220 C1.0 SF N19W86 8069 1254 1302 1306 C3.7 1505 1524 1532 C1.1 1602 1603 1607 B4.9 SF N20W82 8069 1634 1634 1634 1637 C8.5 SF N19W85 8069 1900 1904 1906 B9.4 1913 1917 1923 B3.3	05 August	No Flar	es Observ	ved				
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1117 1121 1123 SF	07 August	0924	0924	0933		SF	N19W55	8069
1136 1138 1147 B1.1 SF N19W57 8069 1235 1238 1241 B1.4 1300 1303 1315 B2.1 SF N19W57 8069 1428 U1420 A1437 SF N19W57 8069 1447 1453 1459 SF N19W58 8069 1723 1724 1730 SF N19W58 8069 1843 1851 1858 B2.8 2008 2037 2100 B3.5 08 August 0905 0909 0914 B1.7 1249 1252 1259 B1.8 SF N19W71 8069 B1258 U1259 A1303 SF N19W73 8069 1315 1316 1320 SF N19W73 8069 1442 1445 1447 B1.2 1505 1505 1509 SF N19W71 8069 09 August 0154 0201 0217 B2.6 0722 0727 0731 B2.1 0843 0905 0912 B5.2 1144 1148 1150 B5.2 1210 1211 1220 C1.0 SF N19W86 8069 1254 1302 1306 C3.7 1505 1524 1532 C1.1 1602 1603 1607 B4.9 SF N20W82 8069 1634 1634 1634 1637 C8.5 SF N19W85 8069 1900 1904 1906 B9.4 1913 1917 1923 B3.3		1035	1035	1046		SF	N19W56	8069
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1447 1453 1459		1300	1303	1315	B2.1	SF	N19W57	8069
1723 1724 1730		1428	U1420	A1437		SF	N19W57	8069
1843 1851 1858 B2.8 2008 2037 2100 B3.5 08 August 0905 0909 0914 B1.7 1249 1252 1259 B1.8 SF N19W71 8069 B1258 U1259 A1303 SF N19W73 8069 1315 1316 1320 SF N19W73 8069 1442 1445 1447 B1.2 1505 1505 1509 SF N19W71 8069 09 August 0154 0201 0217 B2.6 0722 0727 0731 B2.1 0843 0905 0912 B5.2 1144 1148 1150 B5.2 1210 1211 1220 C1.0 SF N19W86 8069 1254 1302 1306 C3.7 1505 1524 1532 C1.1 1602 1603 1607 B4.9 SF N20W82 8069 1634 1634 1637 C8.5 SF N19W85 8069 1900 1904 1906 B9.4 1913 1917 1923 B3.3		1447	1453	1459		SF	N19W58	8069
08 August 0905 0909 0914 B1.7 1249 1252 1259 B1.8 SF N19W71 8069 B1258 U1259 A1303 SF N19W73 8069 1315 1316 1320 SF N19W73 8069 1442 1445 1447 B1.2 1505 1505 1509 SF N19W71 8069 09 August 0154 0201 0217 B2.6 0722 0727 0731 B2.1 0843 0905 0912 B5.2 1144 1148 1150 B5.2 1210 1211 1220 C1.0 SF N19W86 8069 1254 1302 1306 C3.7 1505 1524 1532 C1.1 1602 1603 1607 B4.9 SF N20W82 8069 1634 1634 1637 C8.5 SF N19W85 8069 1900 1904 1906 B9.4 1913 1917 1923 B3.3		1723	1724	1730		SF	N19W58	8069
08 August 0905 0909 0914 B1.7 1249 1252 1259 B1.8 SF N19W71 8069 B1258 U1259 A1303 SF N19W73 8069 1315 1316 1320 SF N19W73 8069 1442 1445 1447 B1.2 1505 1505 1509 SF N19W71 8069 09 August 0154 0201 0217 B2.6 0722 0727 0731 B2.1 0843 0905 0912 B5.2 1144 1148 1150 B5.2 1210 1211 1220 C1.0 SF N19W86 8069 1254 1302 1306 C3.7 1505 1524 1532 C1.1 1602 1603 1607 B4.9 SF N20W82 8069 1634 1634 1637 C8.5 SF N19W85 8069 1900 1904 1906 B9.4 1913 1917 1923 B3.3		1843	1851	1858	B2.8			
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1505 1505 1509 SF N19W71 8069 09 August 0154 0201 0217 B2.6 0722 0727 0731 B2.1 0843 0905 0912 B5.2 1144 1148 1150 B5.2 1210 1211 1220 C1.0 SF N19W86 8069 1254 1302 1306 C3.7 1505 1524 1532 C1.1 1602 1603 1607 B4.9 SF N20W82 8069 1634 1634 1634 1637 C8.5 SF N19W85 8069 1900 1904 1906 B9.4 1913 1917 1923 B3.3		1315	1316	1320		SF	N19W73	8069
09 August 0154 0201 0217 B2.6 0722 0727 0731 B2.1 0843 0905 0912 B5.2 1144 1148 1150 B5.2 1210 1211 1220 C1.0 SF N19W86 8069 1254 1302 1306 C3.7 1505 1524 1532 C1.1 1602 1603 1607 B4.9 SF N20W82 8069 1634 1634 1637 C8.5 SF N19W85 8069 1900 1904 1906 B9.4 1913 1917 1923 B3.3		1442	1445	1447	B1.2			
0722 0727 0731 B2.1 0843 0905 0912 B5.2 1144 1148 1150 B5.2 1210 1211 1220 C1.0 SF N19W86 8069 1254 1302 1306 C3.7 1505 1524 1532 C1.1 1602 1603 1607 B4.9 SF N20W82 8069 1634 1634 1637 C8.5 SF N19W85 8069 1900 1904 1906 B9.4 1913 1917 1923 B3.3		1505	1505	1509		SF	N19W71	8069
0843 0905 0912 B5.2 1144 1148 1150 B5.2 1210 1211 1220 C1.0 SF N19W86 8069 1254 1302 1306 C3.7 1505 1524 1532 C1.1 1602 1603 1607 B4.9 SF N20W82 8069 1634 1634 1637 C8.5 SF N19W85 8069 1900 1904 1906 B9.4 1913 1917 1923 B3.3	09 August	0154	0201	0217	B2.6			
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1210 1211 1220 C1.0 SF N19W86 8069 1254 1302 1306 C3.7 1505 1524 1532 C1.1 1602 1603 1607 B4.9 SF N20W82 8069 1634 1634 1637 C8.5 SF N19W85 8069 1900 1904 1906 B9.4 1913 1917 1923 B3.3		0843	0905	0912	B5.2			
1254 1302 1306 C3.7 1505 1524 1532 C1.1 1602 1603 1607 B4.9 SF N20W82 8069 1634 1634 1637 C8.5 SF N19W85 8069 1900 1904 1906 B9.4 1913 1917 1923 B3.3		1144	1148	1150	B5.2			
1505 1524 1532 C1.1 1602 1603 1607 B4.9 SF N20W82 8069 1634 1634 1637 C8.5 SF N19W85 8069 1900 1904 1906 B9.4 1913 1917 1923 B3.3		1210	1211	1220	C1.0	SF	N19W86	8069
1602 1603 1607 B4.9 SF N20W82 8069 1634 1634 1637 C8.5 SF N19W85 8069 1900 1904 1906 B9.4 1913 1917 1923 B3.3		1254	1302	1306	C3.7			
1634 1634 1637 C8.5 SF N19W85 8069 1900 1904 1906 B9.4 1913 1917 1923 B3.3								
1900 1904 1906 B9.4 1913 1917 1923 B3.3		1602	1603	1607	B4.9	SF	N20W82	8069
1913 1917 1923 B3.3		1634	1634	1637	C8.5	SF	N19W85	8069
		1900	1904	1906	B9.4			
2341 2350 2355 C3.2		1913	1917	1923	B3.3			
		2341	2350	2355	C3.2			



Flare List - continued.

		1 000.0				
				0	ptical	
	Time		X-ray	Imp /	Location	Rgn
Max	End	Class.	BrtnsLat Cl	MD #		
0144	0150	0215	B6.1			
0720	0729	0735	C3.0			
0836	0842	0849	C1.0			
1101	1104	1106	B2.9			
1132	1135	1137	B2.6			
1459	1504	1507	B3.4			
1715	1718	1723	B1.6			
1815	1833	1842	B8.6			
1920	1924	1927	B3.5			
2000	2019	2028	C4.6			
2342	0003	0019	C5.5			
	0144 0720 0836 1101 1132 1459 1715 1815 1920 2000	Max End 0144 0150 0720 0729 0836 0842 1101 1104 1132 1135 1459 1504 1715 1718 1815 1833 1920 1924 2000 2019	Time Max End Class. 0144 0150 0215 0720 0729 0735 0836 0842 0849 1101 1104 1106 1132 1135 1137 1459 1504 1507 1715 1718 1723 1815 1833 1842 1920 1924 1927 2000 2019 2028	Time X-ray Max End Class. BrtnsLat Cl 0144 0150 0215 B6.1 0720 0729 0735 C3.0 0836 0842 0849 C1.0 1101 1104 1106 B2.9 1132 1135 1137 B2.6 1459 1504 1507 B3.4 1715 1718 1723 B1.6 1815 1833 1842 B8.6 1920 1924 1927 B3.5 2000 2019 2028 C4.6	Time X-ray Imp / Imp / Brtns Lat CMD # 0144 0150 0215 B6.1 0720 0729 0735 C3.0 0836 0842 0849 C1.0 1101 1104 1106 B2.9 1132 1135 1137 B2.6 1459 1504 1507 B3.4 1715 1718 1723 B1.6 1815 1833 1842 B8.6 1920 1924 1927 B3.5 2000 2019 2028 C4.6	Time Coptical Max End Class. BrtnsLat CMD # 0144 0150 0215 B6.1 0720 0729 0735 C3.0 0836 0842 0849 C1.0 1101 1104 1106 B2.9 1132 1135 1137 B2.6 1459 1504 1507 B3.4 1715 1718 1723 B1.6 1815 1833 1842 B8.6 1920 1924 1927 B3.5 2000 2019 2028 C4.6

Region Summary

L	ocation			Sunspot	Characteri	istics					Fla	ares			
	Не	lio Are		Extent	Spot	Spot	Mag	7	K-ray	7			ptica	1	_
Date (°Lat°C	CMD) Loi	<u>(10⁻⁶</u>	hemi)	(helio)	Class	Count	Class	С	M		S	1	2	3	4
	Regio	n 8066													
25 Jul N22E	E73 14	8 002	20	04	BXO	003	В				2				
26 Jul N23E	E 59 14	9 002	20	04	BXO	003	В								
27 Jul N24E	E46 14	9 001	.0	05	BXO	003	В				1				
28 Jul N26E	E35 14	6 000	00	00	AXX	001	A								
29 Jul N27E	E22 14	6 000	00	00	AXX	001	A				3				
30 Jul N24E	E09 14	6 000	00	01	AXX	002	A								
31 Jul N24V	V04 14	-6													
01 Aug N24V	V 17 14	-6													
02 Aug N24V	V 30 14	-6													
03 Aug N24V	V43 14	-6													
04 Aug N24V	V 56 14	-6													
05 Aug N24V	V69 14	-6													
06 Aug N24V	V82 14	-6													
								0	0	0	6	0	0	0	0

Crossed West Limb.

Absolute heliographic longitude: 146



Region Summary - continued.

Location	า		Sunspot 0	Characteri	stics		Flares							
	Helio	Area	Extent	Spot	Spot	Mag		X-ray	у			ptica	ıl	
Date (° Lat ° CMD)	Lon	(10 ⁻⁶ hemi)	(helio)	Class	Count	Class	С	M	X	S	1	2	3	4
R ho	gion 806	57												
02 Aug N06E65	051	0010	00	AXX	001	A								
03 Aug N05E52	050	0000	00	AXX		A								
04 Aug N05E39	050													
05 Aug N05E26	050													
06 Aug N05E13	050													
07 Aug N05E00	050													
08 Aug N05W13	050													
09 Aug N05W26	050													
10 Aug N05W39	050													
							0	0	0	0	0	0	0	0
Still on Disk.														
Absolute heliograp	hic longi	itude: 050	0											
Region 806	8													
03 Aug S22E33	069	0030	04	BXO	006	В				3				
04 Aug S22E18	071	0020	01	HSX	002	A								
05 Aug S21E06	070	0020	05	CSO	002	В								
06 Aug S21W09	072	0010	01	HSX	001	A								
07 Aug S20W22	072	0010	01	HRX	002	A								
08 Aug S19W37	072	0000	00	AXX	001	A								
09 Aug S19W50	072													
10 Aug S19W63	072													
							0	0	0	3	0	0	0	0
Still on Disk.														
Absolute heliograp	hic longi	itude: 070	0											
Re	gion 806	59												
05 Aug N21W35	111	0010	03	BXO	006	В								
06 Aug N21W48	111	0100	06	DAO	011	В				1				
07 Aug N21W62	112	0100	09	DAO		В				8				
08 Aug N23W74	109	0110	09	DSO	008	В				4				
09 Aug N21W86	108	0030	06	CSO	005	В	2			3				
							2	0	0	16	0	0	0	0
Crossed West Lim	b.													

Absolute heliographic longitude: 111



Region Summary – continued.

Locati	on		Sunspot (ot Characteristics						Fl	ares			
	Helio	Area	Extent	Spot	Spot	Mag		X-ra	y		О	ptica	ıl	
Date (° Lat ° CMD) Lon	(10 ⁻⁶ hemi) (helio)	Class	Count	Class	C	M	X	S	1	2	3	4
R	egion 80	070												
05 Aug S20E53	023	0000	00	AXX	001	A								
06 Aug S19E39	024	0010	03	BXO	003	В								
07 Aug S19E25	025	0030	06	DSO	009	В								
08 Aug S20E11	024	0060	08	DAO	012	В								
09 Aug S20W01	023	0050	09	CSO	012	В								
10 Aug S20W15	024	0030	09	CSO	007	В								
•							0	0	0	0	0	0	0	0
Still on Disk.														
Absolute heliogra	phic lon	gitude: 02	23											
S	1	U												
Region 80	71													
08 Aug N21E62	333	0060	04	CRO	004	В								
09 Aug N26E49	333	0010	06	BXO	003	В								
10 Aug N26E37	332	0010	04	BXO	004	В								
C							0	0	0	0	0	0	0	0
Still on Disk.														
Absolute heliogra	phic lon	gitude: 3	32											
	T	6	_											
R	egion 80	072												
09 Aug N21E21	001	0000	00	AXX	001	A								
10 Aug N21E08	001													
Č							0	0	0	0	0	0	0	0
Still on Disk.							-							
A1 1 1 1 1	1 . 1	. 1 0	0.1											

Absolute heliographic longitude: 001



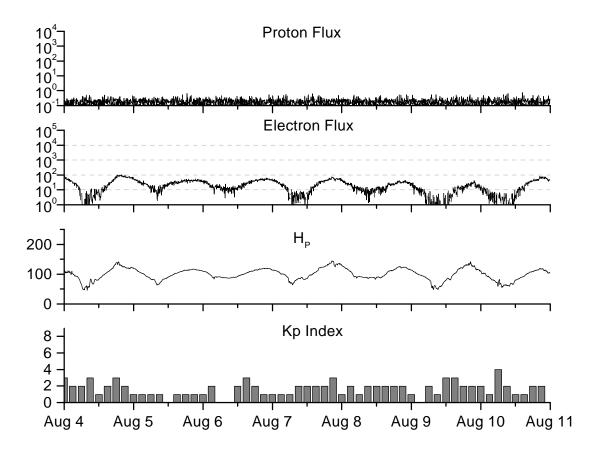
Recent Solar Indices (preliminary) of the observed monthly mean values

of the observed monthly mean values												
			ot Numbers				o Flux	Geomagne				
-	Observed		Ratio	Smooth		**Penticton	Smooth	<u>Planetary</u>				
Month	SWO	RI	RI/SWO	SWO	RI	10.7 cm	Value	Ap	Value			
					1995							
August	25.1	14.3	0.57	25.4	15.4	73.8	76.0	09	12.1			
September	16.5	11.8	0.72	22.0	13.4	72.0	74.8	13	11.8			
r			***			,	,					
October	31.6	21.1	0.67	19.7	12.1	77.9	73.8	16	11.4			
November	15.7	09.0	0.57	18.5	11.4	74.2	73.2	09	10.7			
December	16.2	10.0	0.62	17.6	10.8	72.6	72.8	09	10.7			
December	10.2	10.0	0.02	17.0	10.6	72.0	12.0	09	10.0			
					1996							
January	17.6	11.5	0.55	16.8	10.4	74.5	72.4	09	09.8			
February	09.1	04.4	0.48	16.2	10.1	71.5	72.2	10	09.8			
March	12.1	09.2	0.76	15.4	09.7	72.7	72.1	11	09.9			
17101011	12.1	07.2	0.70	10.1	07.7	, 2.,	, 2.1		07.7			
April	08.5	04.8	0.60	13.6	08.6	69.3	71.6	11	09.7			
May	11.8	05.5	0.47	12.9	08.1*	72.1	71.4	07	09.5			
June	18.8	11.8	0.47	13.5	08.6*	69.6	71.4	05	09.4			
Julie	10.0	11.0	0.03	13.3	08.0	09.0	/1.0	03	09.4			
July	13.2	08.2	0.67	13.4	08.5*	71.2	72.0	07	09.3			
August	20.5	14.4	0.68	13.1	08.4*	72.4	72.1	09	09.4			
September	02.9	01.6	0.62	13.3	08.5*	69.4	72.3*	15	09.3*			
October	02.3	Λ1 0	0.78	140	09.0*	69.2	72.6*	13	09.1*			
		01.8		14.0								
November	26.7	18.6*	0.72*	15.4	10.0*	78.7	73.0*	08	09.1*			
December	21.1	12.7*	0.60*	16.2	10.6*	77.8	73.3*	07	09.3*			
					1997							
January	09.0	06.5*	0.72*	16.5	10.7*	74.0	73.5*	09	09.4*			
February	11.3	07.6*	0.67*			73.8		11				
March	14.4	08.8*	0.61*			73.5*		08*				
March	17,7	00.0	0.01			73.3		00				
April	24.5	15.8*	0.64*			74.5*		10*				
May	28.6	18.5*	0.64*			74.6*		08*				
June	22.1	13.1*	0.59*			72.4*		08*				
		•	-									
July	17.0	10.5*	0.62*			71.2*		07*				
-												

^{*}Preliminary estimates.

The lowest smoothed sunspot indices number for Cycle 21, RI = 12.3, occurred September 1986. The highest smoothed sunspot number for Cycle 22, RI=158.5, occurred July 1989. ** From June 1991 onward, the 10.7 cm radio flux data source is Penticton, B.C. Canada. Prior to that, it was Ottawa.





Weekly Geosynchronous Satellite Environment Summary

Week Beginning 28 July 1997

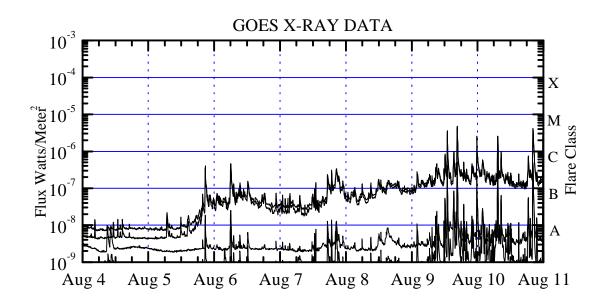
Protons plot contains the five minute averaged integral proton flux (protons/ cm²-sec-sr) as measured by GOES-9 (W135) for each of three energy thresholds: greater than 10, 50, and 100 MeV.

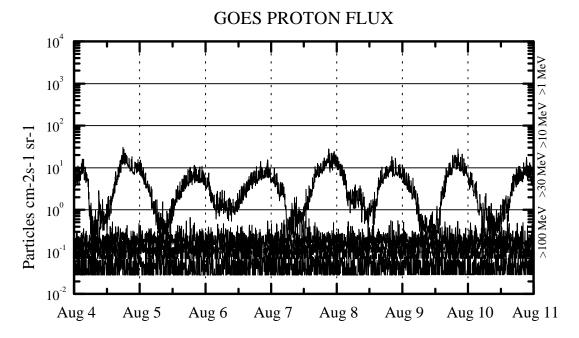
Electrons plot contains the five minute averaged integral electron flux (electrons/ cm² -sec-sr) with energies greater than 2 MeV at GOES-9.

Hp plot contains the five minute averaged magnetic field H component in nanoteslas (nT) as measured by GOES-9. The H component is parallel to the spin axis of the satellite, which is nearly parallel to the Earth's rotation axis. *Kp* plot contains the estimated planetary 3-hour K-index (derived by the USAF 55th Space Weather Squadron) in real time from magnetometers at Meanook, Canada; Sitka, AK; Glenlea, Canada; St. Johns, Canada; Ottawa, Canada; Newport, WA; Fredericksburg, VA; Boulder, CO; Fresno, CA. These data are made available through cooperation from the Geological Survey of Canada (GSC) and the US Geological Survey. These may differ from the final Kp values derived from a more extensive network of magnetometers.

The data included here are those now available in real time at the SWO and are incomplete in that they do not include the full set of parameters and energy ranges known to cause satellite operating anomalies. The proton and electron fluxes and Kp are "global" parameters that are applicable to a first order approximation over large areas. Hparallel is subject to a more localized phenomena and the measurements generally are applicable to within a few degrees of longitude of the measuring satellite.





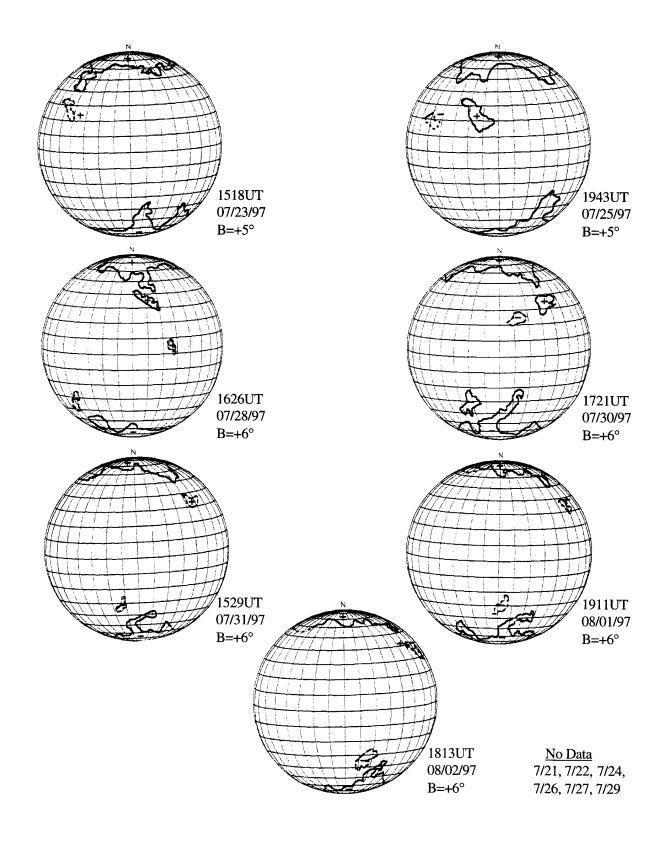


Weekly GOES Satellite X-ray and Proton Plots

Proton plot contains the five minute averaged integral proton flux (protons/cm²-sec-sr) as measured by GOES-9 (W135) for each of the energy thresholds: >1, >10, >30 and >100 MeV. P10 event threshold is 10 pfu (protons/cm²-sec-sr) at greater than 10 MeV.

X-ray plot contains five minute averaged x-ray flux (watts/m²) as measured by GOES 8 and 9 in two wavelength bands, .05 -.4 and .1 - .8 nm. The letters A, B, C, M and X refer to x-ray event levels for the .1 - .8 nm band.





Coronal hole maps from the National Solar Observatory, Kitt Peak, Arizona
These maps are reproductions of the coronal hole contours as derived from the

These maps are reproductions of the coronal hole contours as derived from the Kitt Peak 1083 nm raw data images. These are preliminary data, where solid (and dashed) lines are used to indicate more (and less) confidence in an inference and are printed whenever they are available at SWO.

